ABSTRACT

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A new architecture and operational techniques for supporting high quality live and on-demand streaming multimedia on a data network. By using Helper machines inside the network as data forwarding, caching, and buffering agents, and by forming meshes among Helper machines, advantages of homogeneous, synchronous multicast transmission and of heterogeneous, asynchronous reception are achieved. The architecture provides essentially transparently support to the receivers for near-zero start-up latency, improved playback quality, improved CR-like operations. These are achieved while reducing network and server load compared to today's multimedia networking techniques.